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MIGRAINE.*

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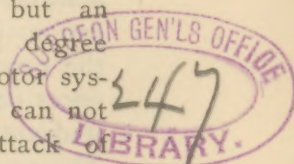
MIGRAINE, or megrim, is ordinarily the periodical protest of cerebral overtax in the acutely exhausted, comparatively young, brain of a mildly neurotic, subject.

It belongs especially to the time of life—from early puberty to middle manhood—when emotional disturbances—fret and worry—most violently agitate and accompany the intellectual movements, and when the latter are most active and impulsive. It is a temporary disequilibrium between waste and repair in the higher cerebral centers, a comparative neuratrophia from mental overstrain which expresses itself in slightly neurotic subjects, like the outcry of an oppressed or famished nerve in neuralgia. It is not denied that it may be precipitated by other conjoint causes than cerebral overstrain, especially such as contribute to congest the head by exciting disequilibrium in the systemic circulation; but an hereditary tendency to weaken under a certain degree of overstrain on the part of the cerebral vaso-motor system, and the co-existence of that strain, which can not be resisted, constitute the essentials of an attack of migraine.

Migraine usually expresses itself unilaterally, because one hemisphere—and that on the left side, the driving hemisphere, as Ferrier terms it—gives out first, the hemisphere to which the heart's blood goes most directly.

Migraine is periodic, but not equi-distantly so, because a certain stage of exhaustion must be reached—longer in some individuals than in others, and longer in the same person at certain times and under certain circumstances than

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others—before the mental machinery resists further goading and the outraged brain asserts its right to rest.

The migrained cerebrum, in refusing thus to be driven to further work, prescribes its own proper therapeutics in the involuntary rest which the mind is forced to take from accustomed labor and emotional commotion, which is worse than labor. The timely recuperation which comes of this repose sooner or later re-establishes the normal equilibrium of recuperation and disintegration, and a re-accumulation of psychical force takes place; a sense of restored mental vigor is again felt by the patient, and eager impulses inspire him to expend it, and he goes along again normally, for a while, expending only the daily accumulations of cerebral force until the more or less nervous temperament of the megrim victim leads, sooner or later, to draught on the reserve nerve force of the cortex and to its final and rapid exhaustion, with a repetition of the previous experience as its sequel. With the lowering of the brain tone from overtax, the cerebro-spinal dominion over the sympathetic nervous system diminishes; vascular excitations and contractions within the cerebrum, followed by vaso-motor paralysis and dilatations of vessels, and the meningeal pain of distension and pressure, and increased, tumultuous and rapid psychical activity, somewhat like that in the early stage of intoxication, follow. Thoughts come thick and fast, till soon the cerebral exhaustion is complete. Sympathetic influences pass downward to the stomach; nausea and emesis frequently follow, and the bowels sometimes move freely. The co-existence of nausea followed by vomiting, and this by sleep and final relief, has given to megrim the synonym of sick-headache; the headache is not dependent upon the sick stomach, but the nausea is due to the sickness in the head. Megrim is a very sick headache, but in another sense. If the vomiting continue long enough, the hemi-crania will, of course, cease with the cessation of the vomiting; but, to make the vomiting effective, the stomach should be washed out with lukewarm water till it is empty of all solid contents, and then hot water, of at least 115°

F., should be given, in from four to six-ounce draughts, every hour or two, till about twelve to sixteen ounces are taken. This may be made more acceptable by flavoring with some agreeable tea-leaves or herbs, the commercial tea from China being often acceptable if not made over strong, and given without cream or sugar. If there should be a loathing for hot drinks along with the usual antipathy to food, then cooling draughts may be given, impregnated with five drops of creosote, or half a drachm of aromatic spirits of ammonia, or carbonic acid water, or peppermint water and a little bromide of potassium. The preferences of the stomach, as thus indicated, should be respected.

The hyperæsthetic special sensations all tend to secure that conservation of brain force so essential to the patient's speedy restoration, and their suggestions should be fully heeded in our management of this affection.

Nature, in these sensations, hints strongly at the rational restorative therapy, and such hints to the wise physician should be sufficient. Every movement increases the bodily discomfort; hence the patient asks to be let alone—to be undisturbed.

The hot, aching eyeballs and hot, painful head, suggest evaporating lotions, the best of which are the ethereal for the head, and laudanum-and-water, of proper temperature to evaporate readily, for the eyes, for ether is painful if it gets between the lids. The sensitive retinae and troubled vision demand the exclusion of light; the morbidly impressible centers of audition make sounds painful and, in aggravated cases, unbearable. The salivary secretion is sometimes increased—more often, altered and disagreeable. To heed nature's demands in these regards is to give the brain, as well as the sensitive centers and channels of audition and vision, the much-needed repose that leads to restoration of exhausted power which has tracked the parts it has forsaken with marks of irritability. The general listlessness and brain-weary feeling which the patient reveals as the painful feelings pass away (if the usual tendency to sleep then does not come on or is interfered

with) demand further brain rest, and our therapy and surroundings for the patient should promote rest until an apparently complete restoration follows each attack.

The intervals of freedom from nervous headache should be prolonged by a course of tranquilizing neurotherapy calculated to promote and maintain the nerve stability and by a moral prophylaxis. To this end the patient should be made well acquainted with the nature of his trouble and the essentials to avert its recurrence.

He should have a mild, unirritating course of constant cephalic galvanization in the interval, repeated daily, or every other day, until he has passed the time of several attacks exempt from them. A full dose of ammonium or potassium bromide, 30 to 40 grains, and a minimum dose of arsenious acid, should likewise be given nightly, for many months, in many cases, and as often as three or four times a day for several days preceding the time of an expected attack. Bromide of potassium, in forty-grain doses, three times a day, is of special service, if the patient is brought fully under its influence when the first ocular disturbances appear, as they do in many of these cases. Guarana may be used to advantage at this time, and subsequently during the attack, but it has not given me the happy results others have ascribed to it. The digestive and assimilative processes are never to be lost sight of, nor any other physical condition calculated in any manner to embarrass the mental movements—to directly or reflexly irritate the brain or to compromise its normal daily nutrition and nightly rest. Besetting sins and moral and physical vices that tend to organic or nervous exhaustion should be inquired into and remedied by discontinuance.

During the attack of migraine the bromides, if the stomach can be made to retain them, are always serviceable, and I give them in large quantities of peppermint-water and minimum quantities of creosote.

In the constitutional treatment of migraine, plenty of pure fresh air and sunlight and a nutritious and digested or digestible and easily assimilated dietary are the best

tonics. Spinal and epigastric sinapisms are also of value, and anodyne rubefacient liniments, as of chloroform or camphor and the volatile liniment, with turpentine, capsicum and oil of peppermint or wintergreen.

A predisposition to attacks of migraine is sometimes awakened by anæmic, cachæmic, or toxæmic states of blood, which especially interfere with normal nerve nutrition in the neurotically inclined. In the first state of the blood the anæmic reconstructives should be mostly ferruginous; in the second, ferruginous and specific; in the latter, mainly specific, conjoined with good food easily appropriated by the system, which is indicated in all impoverishment of blood. Quinine and arsenic in malarious districts, whether the patient have the usual visible malarial symptoms or not; mercury and potassic iodide in syphilitic migraines (such subjects do have migraine as well as the specific, constant cephalalgia); iodide of potassium and iodine in the migraine of lead workers; iodine and iron for the scrofulous. Strychnine, arsenic and cod-liver oil are seldom contraindicated in the anæmic, though the stomachs of many patients revolt at the oil, and it had better not be urged on them. Many subjects of migraine, however, are not anæmic, and some are actually habitually hyperæmic, so far as the head circulation is concerned, and their life habits are such as to keep up an exalted cerebral blood pressure; and, though migraine is to such the most fortunate circumstance that could happen them in putting periodical stops to their overwork and excessive worry, and enforcing resting spells at times in their over-active careers, they often finally die of grave cerebral affections after they have reached the period when excessive keenness of sensibility, emotional and sensory, ceases. But migraines, like constitutional neurasthenics, are often also long-lived, and not especially liable to grave cerebral disease.

The mistake that has been made in the medical conception and consequent management of migraine consists in its having been regarded as a *want* rather than as an

over-draught of cerebral power and consequent abrupt collapse in those who, fortunately, are prone to this collapse from exhaustion, short of destructive cerebral lesion. These patients become cerebrastrhenic before brain structure gives way, while others not so hereditarily inclined go on till stopped by apoplexy or aphasia, etc. Subjects of migraine are usually among the milder class of the neurotically endowed, and they do not often have, or congenitally entail, the graver neuroses.

In consequence of this mistake, a coercive tonic plan, so called, but often more stimulating than tonic, has been thought generally the best, whereas the majority of migraines require repression and regulation of their nervous forces; the maintenance, by corrective restraint medication, of a judicious equilibrium in their mental movements, so as to balance daily the cerebral waste and repair. They need to be taught and medicated so as to stand life's frictions, so as to give their brain a reasonable chance for rest and repair, their stomach a fair opportunity to do its work and answer the encephalon's prayer for daily sustenance. They need a physician to constantly advise and regulate them, as they need an attorney in their business affairs to keep them safe from financial shipwreck in many of their ventures.

The business maxims, "never to postpone for to-morrow what ought to be done to-day," and "never to wait for the next train, if by any possibility the train that has gone can be caught," should be modified to read, what *ought* to be done to-day, only without violence to your organism, should be done;" and if to-day's train cannot be made without overstrain to the system, which may be the beginning of a subsequent breakdown of the cerebro-spinal system, wait for the next train and save yourself.

Migraines, in their best physiological condition, are mentally active, and prone to overwork under business stress. They are ambitious and restlessly inclined to constant endeavor, and seek occupations that readily lead to

final overstrain, for when they are busiest they are most happy.

The rational indications for preventing recurrences of attacks of migraine are repressive cerebral restraints and reconstructive medication. To this end the occupation of the patient should be regulated by his physician, and not alone the consequences of injudicious overwork treated. The nervous center should be tranquillized and the nerve-capital and brain-force economized during the longer or shorter interval between the attacks.

The patient's brain-power should never be squandered. The victim of migraine cannot afford to be prodigal of his mental power: if he does, the end of his prodigality will be husks, and he will sooner or later realize that he has unpardonably sinned against nature. It will be fortunate for him if, in his repentance, he seeks and finds a physician who, instead of goading, by a stimulating treatment, represses, conserves and regulates his powers.

Migraine, with melancholic complication some time preceding or following the attack, justifies opium and aloes, or codeine and aloin; but in the habitual management of frequently recurring attacks it is a most pernicious practice to use opium freely enough to subdue the pain, and the same is true of the free use of whiskey. Nature needs healthy rest, normal restorative tranquillization, and prolonged, healthy, refreshing sleep; not the enforced and fitful, dreamy somnolency or profound stupor of narcotics. If sleep does not come in due season with the administration of bromide of potassium or ammonium, chloral may be given in a thirty or forty-grain dose, largely diluted, when the night-time comes on, or when the vomiting and nausea have about ceased. The bromides are good remedies for the precursory restlessness and fidgets; so also the tranquillizing warm bath, if that be at the time convenient to the patient, so that he will not be too much disturbed in being put into it. Valerian-root added to the bath is of value in the hysterical. Under this treatment the tingling sensations and temporary numbness disappear. Hot

pediluvia, bottles and sinapisms to the feet, also to the spine or stomach, are serviceable in arresting temporary vital prostration. The baths and the bromides serve also to tranquillize the heart and relieve the head, by diverting the blood from them to the feet, for while the carotids are full the radials are small, and the peroneals and tibials are smaller. I have known the hemianopsia, which is a subjective phenomenon, due to encephalic sanguineous pressure, to disappear during the bath and to be averted by the bromide treatment preceding the coming on of the attacks; likewise the photopsia and photophobia.

Contrary to the statements of Latham and others, that bromide of potassium is more serviceable during the attacks than in the interim, I affirm that, if properly employed, so as to secure a restful state of the nervous system and a tendency on the part of the cerebrum, when not actively employed, to seek repose, its effect is decidedly beneficial in prolonging the intervals and shortening the attacks, and finally, in preventing the recurrence of the latter altogether. To accomplish this end, the bromide must not be given to sanguineous saturation; and, to be enabled to rely on the smallest quantities of this salt, galvanism must be conjointly employed, and with persistent regularity, if bromism is shown either in eruption, or impaired motility, or cerebral stupidity.

The temporary cerebral hyperæmia of migraine is induced by defective vaso-motor innervation and consequent paralysis of control over the caliber of the cerebral vessels, which are thus allowed to produce a painful degree of cerebral distension.

The turgid brain even robs the face of blood, and the pupil contracts, not only because the retina is hyperæsthetic, but because of irritation of the ophthalmic ganglion and the origin of the third nerve in the gray nucleus in the floor of the Sylvian aqueduct.

It is astonishing how descending cephalic galvanization, or galvanization over the cervical sympathetic center and under the ramus, and through the head, from the os frontis

over the eye to the occipital spine, will cause these symptoms to disappear by the restoration of tone to the vaso-motor system within the head; but, to make the relief permanent, sleep must follow, and rest absolute to the brain as tired nature demands, and recuperation from the exhausting causes that precipitated the attack comes in the course of nature's benignant *vis medicatrix*, assisted by our art. These conclusions are not conjectural, but based upon a success in the management of migraine that has not disappointed, and have been satisfactorily verified in the writer's own person also.

The view of Wilks and others respecting the eradication of migraine is too discouraging and unjustifiably hopeless, due to neglect of suitable management in the interim of the attacks, just as frequently recurring hysterias are thus too much and too often neglected. One of my patients, formerly (eighteen years ago) a two-days victim to migraine prostration every fortnight, now and for fifteen years past has only occasionally (once or twice a year) a reminder in the return of the boring sensation over the eye or on the temple, which a prompt electrization and a drachm of bromide of potassium in peppermint-water cause to disappear. The rest of the treatment he has learned himself: it is to cease going so fast with his work for the time, and take more rest for a few days, and not to fret because he cannot accomplish the work of two days in one.

I have encountered a form of migraine that sustains a relation to ordinary migraine, or migraine major, similar to that which *petit mal* bears to the *grand mal*, or epilepsy gravior, and it might justly be termed *hemicrania minor* or *mitior*. It sometimes follows, like epileptoid, the graver malady, and sustains the degree of relationship that the simple vertiginous seizures do to the convulsive attacks, or, like the epileptiform disease, it may precede the *haut mal* of megrim.

The case just referred to is an illustration: a patient now under observation had for eighteen months periodic attacks of photophobia, slight photopsia and confusion of vision,

cold feet, increased heat, and sense of fulness and slight pain in head, associated with general uneasiness and indisposition to exertion, lasting for several hours of a day in each month—sometimes oftener, if she used the sewing machine to excess in making her own clothing, always a source of worry to her. The attacks no longer recur since the adoption of the treatment indicated for graver cases—the more moderate use of the sewing machine and the relegation of her best dressmaking to other hands. The making of a stylish dress is sometimes a great strain on a woman's mind. Migraine being self-limited in the duration of its attacks, as it is in its final recurrences, passing away with advanced age, if it does not develop into a graver malady, much of its former therapeutics has been misleading because the attacks have passed off pending the administration of certain drugs, which at best have been of secondary value. Such are valerian, camphor, hyoscyamus, asafoetida, Hoffman's anodyne, ether, etc. An attack may, however, be cut short with chloroform and camphor, or, preferably, chloral and bromide of potassium; but the sleep which follows should be a prolonged one, and the patient should awake refreshed and in condition to receive, and must have adequate nutriment to compensate for his exhaustive experience. If he does not, another attack will be likely to recur soon, unless the foregoing hints as to intermediate treatment are put into practice, and this the patient will not always acquiesce in; but migraine, in the intervals of the attacks, should be managed very much like the successful treatment of epilepsy. While relief during the attacks is desirable, it is all-important to the well-being of the patient to prevent their recurrence by intercurrent management.

The extemporaneous character of this paper precludes a full discussion of the asserted alliance between migraine and epilepsy; but there has been demonstrated no real pathological kinship between these two maladies of the nervous system, and the asserted connection between them cannot be shown clinically, unless in exceptional instances. True migraine victims comparatively seldom become epi-

leptics in later life, and the coming on of an attack of epilepsy or epileptoid and migraine are essentially different, the one being sudden, with momentary loss of consciousness, often with an aura, frequently in the night, but more often just on awaking from sleep in the morning, and often followed by headache; the other approaching gradually, never with loss of consciousness, generally preceding sleep, or passing away with it, or relieved by it, and never coming on after a profound sleep, as epilepsy so often does.

The general therapy of the two being quite similar proves nothing except that neurotic tranquillization and the balancing and conservation of force are equally valuable therapeutic procedures in each of these neuroses, and that tonicity imparted to the cerebral vaso-motor system, as by the minimum doses of nitro-glycerine, mild cephalic descending galvanism, etc., is equally efficient in warding off the tendency to recurring exhaustion, which in migraine appears to be in the cerebral vaso-motor system, while in epilepsy it appears to be primarily in the psychical or psycho-motor area of the brain, with secondary and rapidly following vaso-motor paralysis.

The hyperæsthesia of migraine and the anæsthesia of an attack of epilepsy are as opposite as consciousness in the one, and the absence of it in the other. Headache is the sign essential of the one, while it is the sequel rather of the other.

The occasional beneficial effects of volatile inhalants and stimulants internally in the beginning of each, to postpone an attack, are due to their prolonging nerve tonicity, and preventing the vascular intracranial movement upon which the diverse phenomena of the two different morbid conditions depend. To abort epilepsy, nitrite of amyl, camphor, and the pungent ammonium salts must be inhaled in the very beginning of the aural stage; they are more or less serviceable at any time during an attack of migraine, except the amyl nitrite, the latter, which is the inhalant *par excellence* in epilepsy, often aggravating an established sick headache.

An epileptic subjected to the cerebral-vascular condition of migraine, vaso-motor exhaustion,—the *arteriole* spasm and relaxation, would always have epilepsy. There is an additional factor in epilepsias which is absent in the brains of migraines, viz: a tendency to further morbid movement, reaching to unconsciousness and convulsion, founded in the organic constitution of the cerebral texture. Neither of these conditions belongs essentially to migraine, though, when the epileptic diathesis co-exists with recurring migraine, the transition is easy and natural into confirmed epilepsy.

NOTE.—The foregoing paper was hastily written, in compliance with a promise to present the writer's views on the subject, inasmuch as they had been requested for publication. It was hoped that the discussion which might follow the reading of the paper would have enabled the author to elaborate his views, by answering objections which might be made to them, but the hour of adjournment having arrived at the conclusion of the reading of the paper, discussion was deferred, and the two next subsequent meetings of the Society were occupied exclusively with business matters.

This occasion is taken, therefore, to add that what the writer understands as migraine, as ordinarily seen, is a condition of somewhat precipitate brain tire in persons usually of slight neuropathic tendency, as contradistinguished from the more chronic—more complete and more tardily reached form of brain exhaustion which we see in neurasthenia and cerebrasthenia.

The intermittent hemicrania, or "sun pain," which seems only to remain with the patient while the sun is in the horizon, going away at night to return the next day, and so continue, may have malaria for its cause, since arsenic and the antiperiodics cure it; or it may be that each day's mental effort is sufficient to induce enough vaso-motor exhaustion to excite migraine in a brain constantly on the verge of exhaustion, which only sufficiently recuperates at night to admit of relief from pain, but not to bring about sufficient repair for the strain of the succeeding day. But most of these cases have been found among the malariously infected of malarial regions. It is not to be denied also, that true periodic migraine is sometimes associated with grave cerebral lesions, as with cerebellar disease and tumors and other lesions of the cerebrum and insanity, though ordinarily it is not. The writer has seen it so complicated, and relieved by measures which diminished intracranial arteriole distension and pressure.

A singular case of migraine which, until very lately, recurred every ten or fourteen days in an overworked lawyer under the writer's professional care, is associated with completely lost patellar tendon-reflex phenomena, every effort having failed to evoke it.

It is not intended in the foregoing paper to deny the influence of sick states of the stomach in precipitating, by transmitted irritation and interference with cerebral nutrition, attacks of migraine in the predisposed.

What is intended in the foregoing paper is to describe migraine as the writer has ordinarily observed and understands it.